Nebraska
Severe Weather Awareness Week

March 22 - 26, 2010

Tornado Safety Drill

Wednesday, March 24th

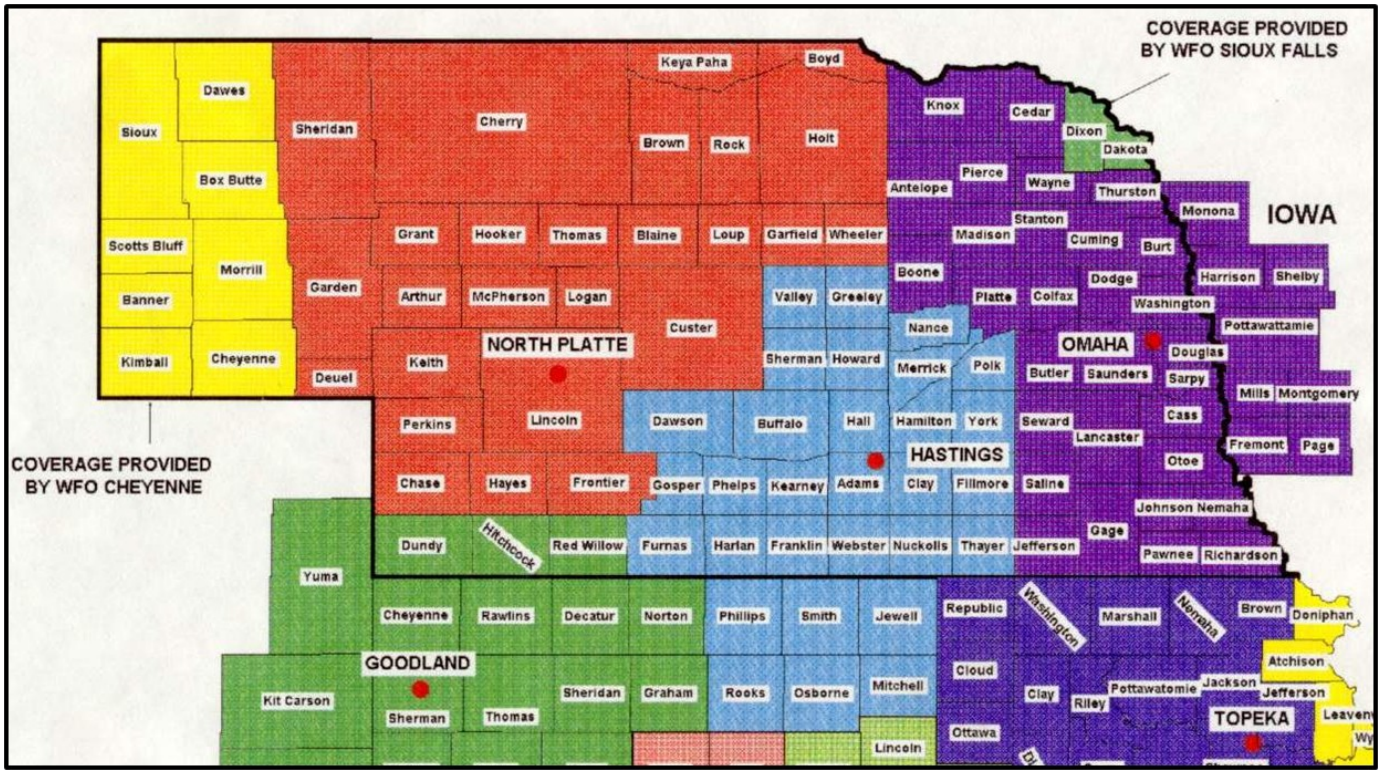
- 10:00 a.m. CDT - Drill sequence begins. All warnings are valid for 20 minutes.
- 10:10 a.m. CDT - National Weather Service Offices in Omaha, NE and Sioux Falls, SD issue a TEST tornado warning for Eastern Nebraska.
- 10:20 a.m. CDT - National Weather Service Office in Hastings, NE issues a TEST tornado warning for South Central Nebraska.
- 10:30 a.m. CDT/9:30 a.m. MDT - National Weather Service Office in Cheyenne, WY issues a TEST tornado warning for Western Nebraska.
- 10:35 a.m. CDT/9:35 a.m. MDT - National Weather Service Office in North Platte, NE issues a TEST tornado warning for Western and North Central Nebraska.
- 10:40 a.m. CDT/9:40 a.m. MDT - National Weather Service Office in Goodland, KS issues a TEST tornado warning for Southwestern Nebraska.

The following page shows a breakdown by county of the area covered by each National Weather Service Office.

We hope that you will take this opportunity to review your disaster preparedness plan at school, home, work and while you travel. When it comes to severe weather, everyone needs to be prepared.

National Weather Service Offices Serving Nebraska

Severe Weather Awareness Week March 22 - 26, 2010



Far West	West and North Central	Southwest
National Weather Service 1301 Airport Parkway Cheyenne, Wyoming 82001 (307) 772-2468 **http://www.weather.gov/cys**	National Weather Service 5250 E. Lee Bird Drive North Platte, Nebraska 69101 (308) 532-4936 **http://www.weather.gov/lbf**	National Weather Service 920 Armory Road Goodland, Kansas 67735 (785) 899-7119 **http://www.weather.gov/gld**

South Central	East	Far Northeast
National Weather Service 6365 North Osborne Drive West Hastings, Nebraska 68901 (402) 462-4287 **http://www.weather.gov/gid**	National Weather Service 6707 North 288th Street Valley, Nebraska 68064 (402) 359-5166 **http://www.weather.gov/oax**	National Weather Service 26 Weather Lane Sioux Falls, South Dakota 57104 (605) 330-4247 **http://www.weather.gov/fsd**

Be Red Cross Ready

American Red Cross

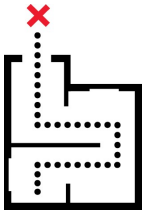
Three Actions

1 Get a Kit

Have at least 3 days of supplies in an easy-to-carry evacuation kit, with additional supplies on hand. Remember to check your kit and replace the stock every 6 months.

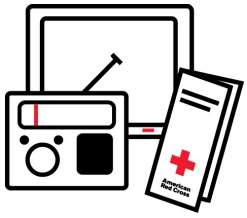
- Water & Food
- Flashlight
- First Aid Kit
- Medications
- Radio
- Batteries
- Tools
- Clothing
- Personal Items
- Money
- Map
- Contact Information
- Pet Supplies
- Sanitary supplies

2 Make a Plan



Planning ahead will help you have the best possible response to an emergency. Talk with your family and establish responsibilities. Learn how and when to turn off utilities. Practice evacuating your home twice a year. Include your pets.

3 Be Informed



Learn what emergencies may occur where you live, work or play. Know how your local authorities will notify you, and the names of surrounding towns and counties. Check the weather forecast before heading outdoors, and be aware of the signs of an approaching storm. Know where to get updated weather information, whether it be from NOAA Weather Radio, AM/FM radio, or television. Share what you have learned with your family, friends, and neighbors and encourage them to be informed too.

When we come together,
we become something bigger than us all.

For more information contact your local chapter or go to www.redcross.org

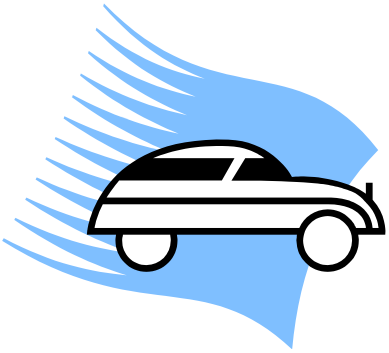
Create a Disaster Kit

For Your Home Include...

- Battery Operated Radio
- Flashlight
- Extra Batteries
- Water and Food
- First Aid Kit
- Prescription and Non-prescription Drugs
- Tools and Supplies
- Supplies to Maintain Sanitation
- Clothing
- Necessities for Infants, Children and Pets
- Entertainment (books and games)
- Blankets
- Important Family Documents

For Your Car Include...

- Battery Operated Radio
- Flashlight
- Extra Batteries
- Water and Food
- First Aid Kit
- Tools and Supplies
- Supplies to Maintain Sanitation
- Clothing
- Necessities for Infants, Children and Pets
- Entertainment (books and games)
- Blankets
- Small Shovel and Kitty Litter for Slippery Roads
- Flares so That Others Can See You on the Road



For Work Include...

- Battery Operated Radio
- Flashlight
- Extra Batteries
- Water and Food
- First Aid Kit
- Tools and Supplies
- Supplies to Maintain Sanitation
- Clothing
- Necessities for Infants and Children, if applicable
- Blankets

Suggestions and Reminders...

- Store the kit in a convenient place known to all family members and employees
- Keep items in air tight plastic bags
- Change the stored water and food every six months
- Re-think/Update the kit and family needs at least once a year
- Ask a physician or pharmacist about storing any prescription medications

American Red Cross

For more information contact your local chapter or go to www.redcross.org

Severe Weather Terminology

Severe Weather Awareness Week March 22 - 26, 2010

SEVERE THUNDERSTORM — A thunderstorm is considered severe when it produces any of the following: Hail 1" (quarter size) or larger in diameter, winds which equal or exceed 58 MPH, or a tornado.

FUNNEL CLOUD — A funnel shaped cloud, usually extending from a convective cloud, which is associated with a violently rotating column of air that is NOT in contact with the ground.

TORNADO — A violently rotating column of air that extends from a convective cloud and is in contact with the ground. The entire column of air associated with a tornado is not always visible. A tornado may only be visible once it has picked up enough dirt and debris.

HAZARDOUS WEATHER OUTLOOK — A product which is issued daily, highlighting any potential significant weather in the area for the next 7 days.

WATCH — Issued when conditions are favorable for the development of severe weather in and close to the watch area. The size of the watch can vary depending on the weather situation and is usually issued for a duration of 4 to 8 hours. During the watch, people should review severe weather safety rules and be prepared to move to a place of safety if threatening weather approaches.

WARNING — Issued when severe weather is detected by radar or reported by storm spotters. Information in this warning will include the location of the storm, what areas will be affected and the primary threat associated with the storm. People in the affected area should seek safe shelter immediately. Remember that severe thunderstorms can produce tornadoes with little or no advance warning. Warnings can be issued without a watch already in effect.

SIGNIFICANT WEATHER ADVISORY — Issued for "near" severe thunderstorms. Typically issued for storms with 3/4" (penny sized) hail and wind gusts near 50 MPH, but can also be issued for large amounts of small hail covering the ground. It is also used as a "heads up" for ongoing severe storms which may move into the area.

SEVERE WEATHER STATEMENT — A product issued which provides follow-up information on any severe weather warnings in effect and conditions which have occurred or are occurring. This information includes updated storm paths and any storm reports, such as hail size or damage, received from spotters.

FLASH FLOOD — A rapid rise in water that occurs with little or no advanced warning, usually as the result of intense rainfall over a relatively small area in a short amount of time. Flash Floods can also be caused by dam or levee failures, ice jams, and topography.

FLASH FLOOD WATCH — Issued to indicate current or developing hydrologic conditions that are favorable for flash flooding in and close to the watch area. When a watch is issued, be aware of any potential flood hazards. Those in the affected area are urged to be ready to take quick action if a Flash Flood Warning is issued or flooding is observed.

FLASH FLOOD WARNING — Issued when flash flooding is in progress, imminent, or highly likely. Those in the affected area should evacuate immediately or move to higher ground if possible. Information in this warning will include the locations in the flood and any areas which may be impacted. Flash Flood Warnings can be issued without a Flash Flood Watch in effect.

Thunderstorm Safety

Severe Weather Awareness Week March 22 - 26, 2010

Thunderstorms are a common occurrence across Nebraska, and if the right conditions exist, some will become severe. Recall that if a thunderstorm produces hail equal to or greater than one inch in diameter (quarter size), winds equal to or greater than 58 miles per hour, or a tornado, it is considered severe. Even though thunderstorms can and do occur at any time of the year, the most common time for thunderstorms, and especially severe thunderstorms, is during the spring, summer, and early fall.

There are many dangerous aspects of thunderstorms, severe or not, that pose a threat to life and property.

Lightning – Occurs with ALL thunderstorms.

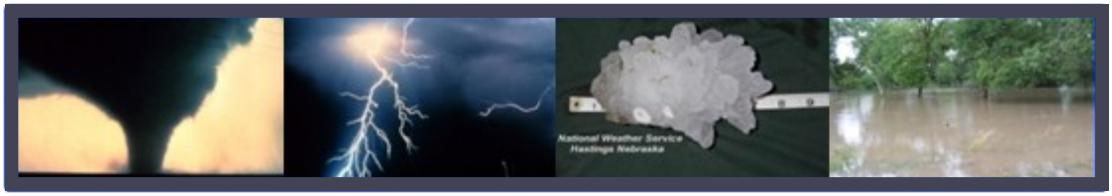
Floods – Kills more people on average than any other severe weather hazard.

Straight-Line Winds – Can exceed 100 miles per hour with damage comparable to a tornado.

Large Hail – Causes millions of dollars each year in crop and property damage.

Tornadoes – Nature's most violent storm, with winds over 200 miles per hour possible.

Each year, many people are killed or seriously injured by tornadoes and severe thunderstorms despite advance warning. Some did not hear the warning, while others heard the warning but did not believe it would happen to them. The following preparedness information, combined with timely severe weather watches and warnings, could help save your life. Once you receive a warning or observe threatening skies, **YOU** must make the decision to seek shelter before the storm arrives. It could be the most important decision you will ever make.



Did you know…

- The average forward speed of a tornado is 30 miles per hour, but can be nearly stationary or roar through at close to 70 miles per hour.
- Lightning can occur from cloud-to-cloud, within a cloud, cloud-to-ground, or cloud-to-air.
- A downburst is a small area of rapidly descending air beneath a thunderstorm. Once this air hits the ground, it spreads out, causing potentially damaging straight-line winds. Downbursts present an extreme danger to aviation.
- Large hail stones can fall at speeds greater than 100 miles per hour.
- The largest hailstone ever recorded in the United States fell in Aurora, Nebraska, on June 22, 2003. This hailstone had a 7 inch diameter and a circumference of 18.75 inches.

Hail Maker

Name _____

Directions: Gather the following materials and follow the steps below to illustrate how hail forms within thunderclouds.

What You Need—

- Scissors
- Wax paper
- Saucer
- Eyedropper
- Cold tap water
- Black construction paper
- Desk lamp
- Paper towel
- Magnifying lens
- Freezer

What You Do—

1. Cut a piece of wax paper to fit into the saucer. Place the paper into the saucer.
2. Use the eyedropper to place, separately, about 5 drops of water onto the wax paper.
3. Place the saucer in the freezer.
4. After 30 minutes, remove the saucer and place a drop of water on top of each frozen drop. Put the saucer back in the freezer.
5. Repeat Step 4 twice more. Wait an hour after you last add water. (**Note:** For a more dramatic effect, use different colors of water to form each layer.)
6. Place the black paper under the desk lamp. Remove one of the ice pellets and dry it with a paper towel. Place the pellet with its flat side facing up on the black paper.
7. Use the magnifying lens to observe the structure of the ice. View it from different angles. (As you make your observations, replace melted ice pellets with others.)

Hail Maker

Describe the color and clarity of each of the different layers.

What You Discovered—
How do these ice pellets resemble hail? How are they different?

Challenge: Does the temperature of the water used to form each layer have an effect?

Test your hypothesis: Use both warmer and colder (ice-cooled) water as you form your ice pellets.

What to Do in a Thunderstorm

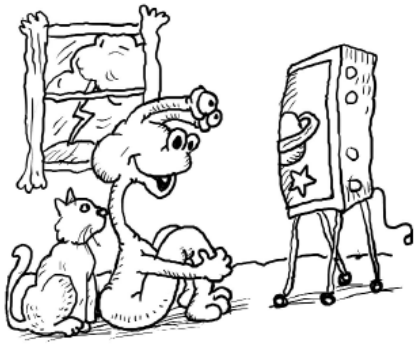
Name _____

How can you stay safe during a thunderstorm? Know what to do.

When I hear thunder...

- If I'm on the phone, then...

- If I'm outside, then...



- If I'm watching television, then...

American Red Cross

Visit the American Red Cross Web site at *www.redcross.org/disaster/masters*

What to Do in a Thunderstorm

- If I'm in a boat, then...

- If I'm outside on my grandmother's farm, then...

- If I'm taking a bath, then...

- If I'm playing cards, then...

American Red Cross

Visit the American Red Cross Web site at *www.redcross.org/disaster/masters*

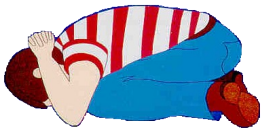
Tornado Safety

Severe Weather Awareness Week March 22 - 26, 2010

Tornadoes can happen at any time of the year, and at any time during the day or night. Though more common in the afternoon and evening hours, tornadoes can happen and have been reported at 2 or 3 o'clock in the morning! Many people think a tornado is always visible, but there are times, in storms which have high amounts of precipitation, that it can be completely wrapped in rain, making it indistinguishable from surrounding clouds. Contrary to what some may believe, tornadoes can and do cross rivers, mountains, and big cities. For these reasons, it is very important to have a plan of action in case of a tornado.

What should I do when a tornado is approaching or a warning has been issued?

- **SEEK SHELTER *IMMEDIATELY!* Once in shelter, take the protection position.**



Where do I go?

- **Reinforced shelters** – A basement or underground shelter is the best option. Protect your head and eyes from deadly flying debris. If no basement is available, go to an interior area on the lowest floor – such as a bathroom or closet. If possible get under something sturdy like a bench or table. ***Stay away from windows!***

What should I do if I am located…

- **Outdoors** – If you cannot quickly walk to a shelter, immediately get into a vehicle, buckle your seat belt and try to drive to the closest sturdy shelter. If flying debris occurs while you are driving, pull over and park. *You do have the following options as a last resort:* Stay in the car with the seat belt on. Put your head down below the windows, covering with your hands and a blanket if possible. If you can safely get noticeably lower than the level of the roadway, exit your car and lie in that area, covering your head with your hands. **NEVER** seek shelter under a bridge or overpass.

  Your choice should be driven by your specific circumstances!

  The important thing to understand is that if you find yourself outside or in a car and you are unable to get to a safe shelter, you are at risk from a number of things outside your control, such as the strength and path of the tornado and debris from your surroundings. This is the case whether you stay in your car or seek shelter in a depression or ditch, both of which are considered last resort options that provide little protection. The safest place to be is always an underground shelter, basement or safe room.

- **In a Mobile Home** – Evacuate immediately! Mobile homes are particularly vulnerable to overturning and destruction from strong winds and tornadoes. Tie-downs generally will not protect a mobile home from tornadoes. If possible, leave the mobile home and go to a community shelter. If none is available, a ditch, culvert, or other low lying area may offer better protection. Have a plan of action prepared before a storm hits.
- **At School, Work, Shopping or in Other Buildings** – Stay indoors! Avoid cars, buses, or any other vehicle. Follow plans made in advance to go to a basement or an interior room or hallway on the lowest floor. Avoid the end of any hallway that opens to the outside as well as rooms with windows or outside walls. Stay out of auditoriums or any other structure with wide free-span roofs, as these types of structures are quite vulnerable to tornadic winds. Once you are in shelter, crouch down and cover your head!

A Tornado Is Born

Name _____

Step 1: Use books, the Internet and other resources to define each of the words below. If possible, draw a picture of the word to help others understand its meaning.

anvil cloud:

atmosphere:

condense:

cumulus cloud:

cumulonimbus cloud:

downdraft:

front:

funnel cloud:

mesocyclone:

supercell:

thunderhead:

updraft:

vortex:

vertical wind shear:

A Tornado Is Born

Step 2: Below is a description of the way tornadoes form. Some of the words are missing. Use the words from Step 1 to complete the description. Then, draw a storyboard on the back of the page showing the formation of a tornado.

High in the _____, cool air pushes against warm air. The place where the two kinds of air meet is called a _____. A front can stretch over 100 miles (161 kilometers).

On warm days, the air near the ground is much warmer than it is at higher elevations. Warm air rises by bubbling up from the ground, just like the bubbles in a pot of boiling water. If the air has enough moisture in it, the moisture _____ and forms _____.

Sometimes, the rising air is trapped by a layer of cooler air above it. As the day continues, the warm air builds up. If this pocket of warm air rises quickly, it can break through the cap of cooler air like water shooting up from a fountain and a _____, or _____ (kyu-mya-lo-NIM-buhs) cloud grows, topped by an _____. The thunderheads most likely to cause tornadoes are those that form along and ahead of fronts.

Strong, fast winds tend to blow along and above fronts. If slower surface winds blow opposite to the direction of the higher winds, a _____ forms. Vertical wind shear can cause the rising air in a thunderhead to begin to rotate.

A _____ is a thunderstorm with a constantly rotating _____. Supercells are responsible for a high percentage of severe weather events, especially _____.

A Tornado Is Born

If the rising column of air in a thunderhead begins to rotate, it is called a _____ (mez-uh-SY-klon). In a mesocyclone the updrafts and _____ are in near balance, allowing the storm to continue for several hours.

As a mesocyclone rotates, it stretches toward warm air near the ground. The lower part of the mesocyclone narrows. The narrower it becomes, the faster it spins.

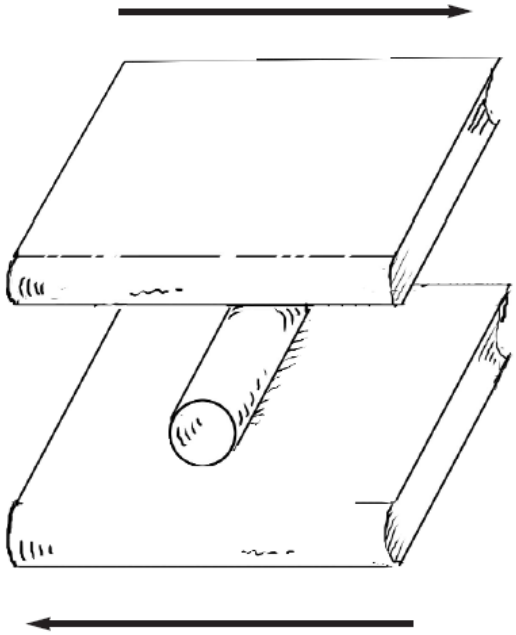
When this _____ dips down from the mesocyclone, it draws in warm, moist air. The air cools as it is pulled up into the column. Tiny droplets of water form and a whirling cloud appears. This cloud is called a _____.

Some funnel clouds hang straight down from the storm cloud. Others stretch sideways through the sky. A funnel cloud may dip down and retract into the mesocyclone, or it may touch the ground. If it touches the ground, the funnel cloud is called a _____.

Wind Shear

Name _____

Directions: Gather the following materials and follow the steps below to illustrate wind shear and its role in creating tornadoes.



What You Need—

- Toilet tissue tube
- 2 hardbound books

What You Do—

1. Place the toilet tissue tube, horizontally, between the two books
2. Move the books in different directions as the tube rolls between them
3. Describe or illustrate what happens

What You Discovered—

If the top book represents the upper winds and the bottom book represents the lower winds, how does the movement represent wind shear?

If the tube in its initial position represents a horizontal wind tunnel, what does the tube represent when it hits the ground?

How does this illustrate real tornado formation?

American Red Cross

Lightning Safety

http://www.lightningsafety.noaa.gov

One dangerous aspect of weather that sometimes is not taken as seriously as others is lightning. Summer is the peak season for one of the nation's deadliest weather phenomena, but don't be fooled, lightning strikes happen at all times of the year. In the United States, an average of 58 people are killed each year by lightning. In 2008, 28 people have died due to lightning. In 2009, 34 people were struck and killed, while hundreds of others were permanently injured. Of the victims who were killed by lightning in 2009:

- 100% were outside
- 82% were male
- 71% were males between the ages of 10 - 50
- 21% were doing yard work
- 18% were heading toward a safe shelter

When Thunder Roars, Go Indoors!

The reported number of injuries is likely far lower than the actual total because many people do not seek help or doctors do not record it as a lightning injury. People struck by lightning suffer from a variety of long-term, debilitating symptoms, including memory loss, attention deficits, sleep disorders, and numbness.

Avoid getting caught in a dangerous situation!
If you can hear thunder, you are close enough to be struck by lightning!

- Move into a sturdy building or an automobile with a metal top. The frame of the building or of a metal car body will allow the charge to be conducted away from you.
- Outdoor activities such as golfing and baseball can present a risk to those in attendance, as these take place on a fairway or ball field, both of which are wide open. Those attending rodeos or concerts in open arenas, sitting on metal bleachers or under a metal overhang, are also at risk.
- Get out of boats and away from water, as water is an electrical conductor. On the open water, you may also become the tallest object and a prime target.
- When indoors, avoid using any corded and electrical appliances. Also stay away from pools, tubs, showers, or any other plumbing. Electricity can travel through wiring and plumbing, posing a risk to those in contact.
- If someone is struck by lightning, get medical help immediately. With proper treatment, including CPR if necessary, most lightning victims survive.

Did you know...

Thunderstorms do not have to be large in size or severe in nature to create potentially fatal lightning strikes!!

As a thunderstorm grows, areas of rising and descending air cause a separation of positively and negatively charged particles within the storm. At the same time, oppositely charged particles are gathering on the ground below. The attraction between the particles in the cloud and at the ground quickly grows, and once the force is strong enough to overcome the air's resistance, lightning occurs.

Lightning Safety

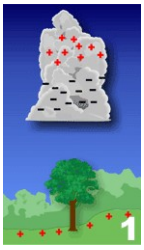
http://www.lightningsafety.noaa.gov

Scientists that study lightning have a better understanding today of the process that produces lightning, but there is still more to learn. There are a number of theories involving the lightning process, most of which focus on the idea of a separation of electrical charges and the creation of an electrical field within a thunderstorm. Studies have also shown that ice, hail, and partially frozen water droplets, known as graupel, are important keys in the development of lightning. Clouds which do not produce large amounts of ice typically fail to produce lightning.

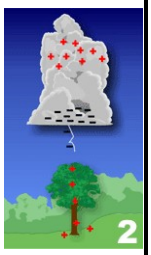
Thunderstorms have very turbulent environments, where updrafts and downdrafts occur within close proximity to one another. As a thunderstorm grows, precipitation begins to form, with mostly ice crystals in the upper level, a mixture of ice crystals and hail in the middle of the cloud and a mixture of rain and melting hail in the lower level of the cloud. Due to air movement and collisions between the particles in the storm, they become charged. The lighter ice crystals gather a positive charge and are carried into the higher part of the storm. The heavier hail gathers a negative charge and falls toward the lower part of the storm. The end result is that the top of the storm becomes positively charged and the lower part becomes negatively charged.

Normally, the earth's surface has a negative charge. However, as the negative charge builds in the lower part of the storm, the ground beneath the base of the clouds and immediately around the base becomes positively charged. As the clouds move, they induce positive charges on the ground which follow the cloud like a shadow. Initially, the air acts as an insulator between the charges. When the electrical potential between the positive and negative charges becomes too great, there is a discharge of electricity that we know as lightning.

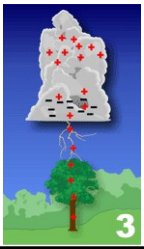
How Lightning Develops Between The Cloud And The Ground



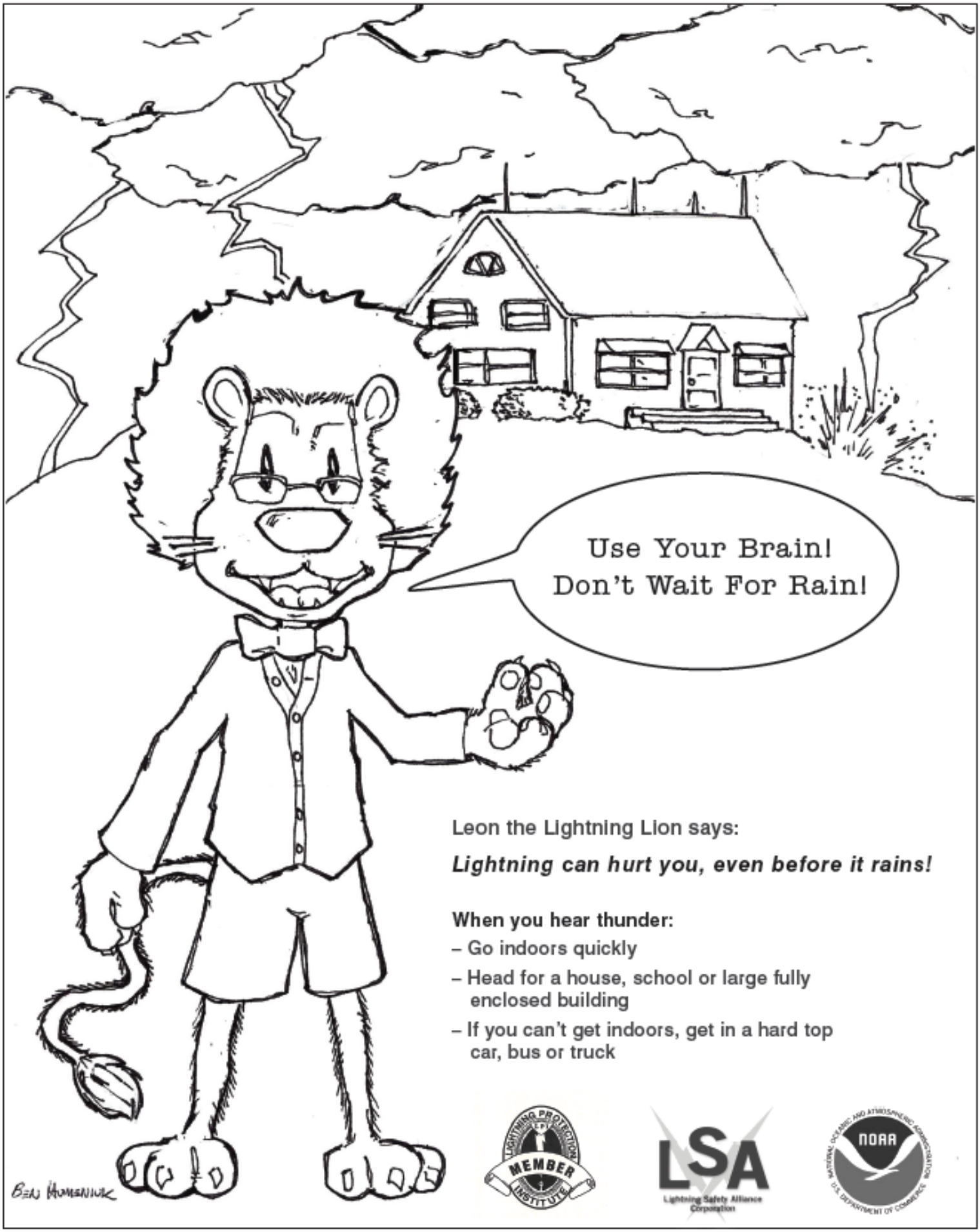
A moving thunderstorm gathers another pool of positively charged particles along the ground that travel with the storm (Image 1). As the difference in charges continues to increase, positively charged particles rise up taller objects such as trees, houses, and telephone poles. Have you ever been under a storm and had your hair stand up? Yes, the particles also can move up through you! This is one of nature's warning signs that says you are in the wrong place, and you may be a lightning target!



A channel of negative charge, called a stepped leader, will descend from the bottom of the storm toward the ground, creating a channel (Image 2). It is invisible to the human eye, and shoots to the ground in a series of rapid steps, each occurring in less time than it takes to blink your eye. As the negative leader approaches the ground, a positive charge collects in the ground and in objects on the ground.



This positive charge reaches out to the approaching negative charge with its own channel, called a streamer (Image 3). When these channels connect, the resulting electrical transfer is what we see as lightning. After the initial lightning strike, if enough charge is leftover, additional lightning strikes will use the same channel and will give the bolt its flickering appearance.

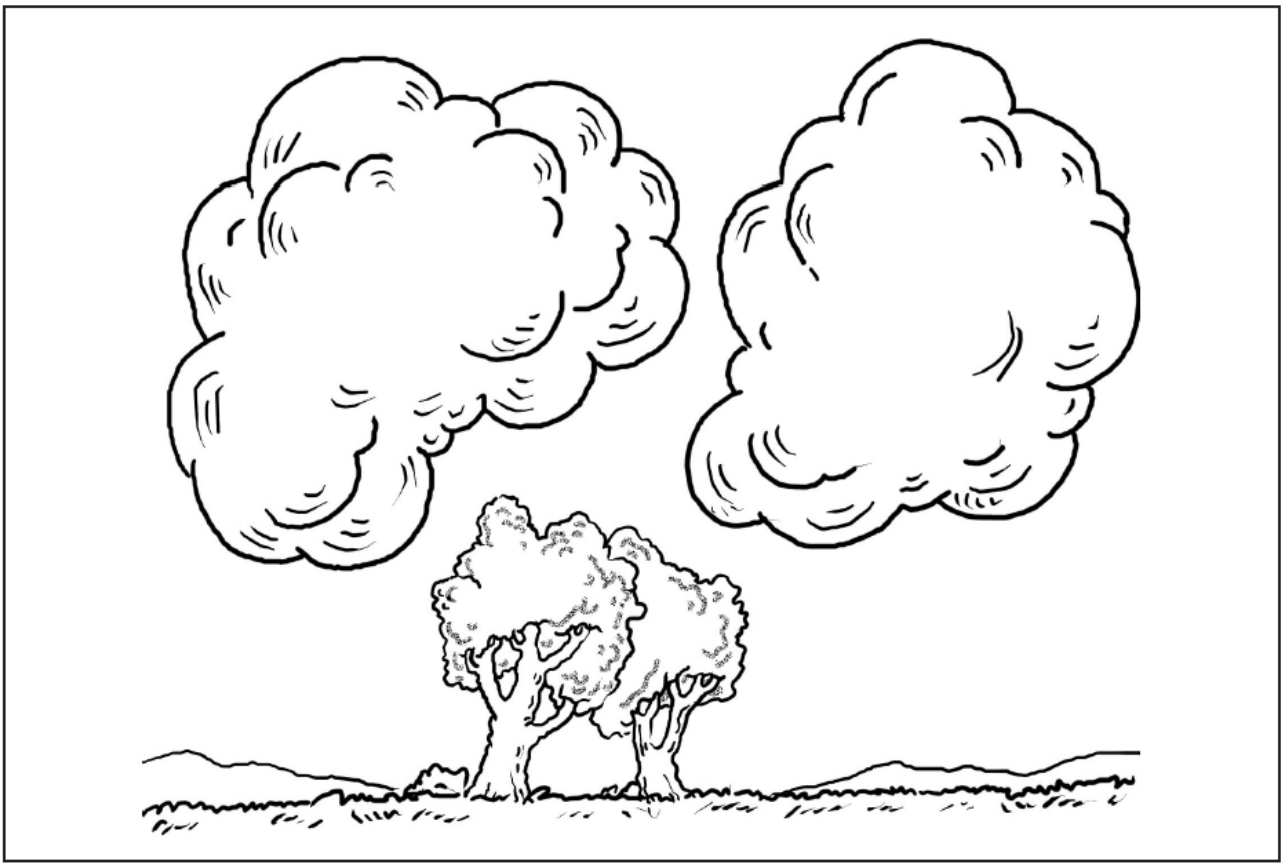


When thunder roars, go indoors!

How Lightning Forms

Name _____

Directions: Lightning involves the exchange of electrons between clouds and the earth. Use the symbols and terms below to complete the diagram and create your own "lightning flashes."



Terms to use:

positive charge (+)

negative charge (–)

step leader

return stroke

cloud-to-ground lightning

lightning within clouds

base of the cloud

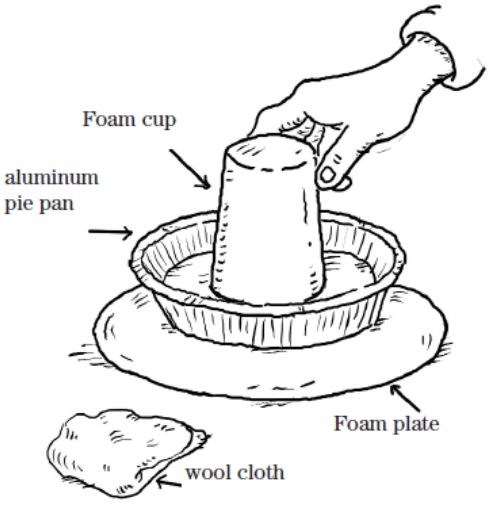
American Red Cross

Visit the American Red Cross Web site at *www.redcross.org/disaster/masters*

You're the Scientist: The Charge Carrier

Name _____

Directions: Early studies of lightning are at the base of our current knowledge of electricity. You are a scientist who will investigate electric charges by making an electrophorus (elec-TRÄ-for-us; Greek for "charge carrier").



Materials:

- Foam dinner plate
- Wool cloth
- Disposable aluminum pie pan
- Foam cup
- Masking tape

Procedure:

1. Tape the cup, upside down, to the inside center of the aluminum pie pan.
2. Turn the foam plate upside down and rub it with a wool cloth for about a minute.
   Then, charge the pie pan in the following manner:
3. Place the pie pan directly on top of the charged foam plate, with the cup sticking up like a handle.
4. Quickly touch the pie pan with your finger.
   What do you hear?

   What do you feel?

5. Using the insulating foam cup as a handle, lift the pie pan.
   What do you see?

6. Darken the room. Then, discharge the pie pan by touching it with your finger.
   What do you hear?

   What do you feel?

   What do you see?

American Red Cross

Visit the American Red Cross Web site at *www.redcross.org/disaster/masters*

You're the Scientist: The Charge Carrier

7. Repeat the experiment. How can you make the largest spark?

Analysis:

What is the charge of the foam plate once it attracts electrons from the wool?

What is the insulator in this experiment? Why is it important to use an insulator?

What happens to the charged pie pan when you touch it?

What charge does the pie pan carry?

What causes the spark of light and sound?

What are you actually feeling when the "shock" flows through your finger?

Flash Flood Safety

http://www.floodsafety.noaa.gov

On average, more people are killed by flooding than by any other single severe weather hazard, including tornadoes, lightning, and hurricanes. Most of these deaths occur at night, when it is more difficult to recognize flood dangers, and when people are trapped in vehicles. Do you and your family know what to do in case of a flood?

Remember…

- **DO NOT** drive onto a flooded roadway.
- **DO NOT** drive through flowing water.
- If you approach a roadway that is flooded, **TURN AROUND - DON'T DROWN**.
- Drive with extreme caution if roads are even just wet or it is raining. You can lose control of your vehicle if hydroplaning occurs, which is when a layer of water builds up between your tires and the road, causing there to be no direct contact between your vehicle and the road.

If a Flash Flood Warning is issued for your area…

- **If advised to evacuate, do so *immediately*!** Act quickly to save yourself, you may not have much time.
- Get out of areas that are subject to flooding and move to a safe area before access is cut off by flood waters. Low spots such as dips, canyons, and washes are not the places you want to be during flooding!
- **DO NOT** camp or park your vehicle along streams and washes, particularly during threatening conditions.
- **DO NOT** drive if not necessary. If driving is necessary, do not attempt to drive over a flooded road, as the depth of the water is not always obvious, and the roadway may no longer be intact under the water. Never drive around a barricade, they are placed there for your protection! If your vehicle stalls, leave it immediately and move to higher ground before water sweeps you and your vehicle away.
- **DO NOT** try to walk, swim, or play in flood water. You may not be able to determine if there are holes or submerged debris, or how quickly the water is flowing, and you may be swept away. If water is moving swiftly, as little as 6 inches of water can knock you off of your feet! There is also a danger of hazardous materials polluting the water. Also remember that water is an electrical conductor, if there are power lines down, there is a possibility of electrocution.
- Always continue to monitor the situation through the National Weather Service website, NOAA Weather Radio All-Hazards, or your favorite local television or radio stations.

Why is "Turn Around - Don't Drown" so important?

Each year, more deaths occur due to flooding than from any other severe weather related hazard. The main reason is people underestimate the force and power of water. More than half of all flood related deaths result from vehicles being swept downstream. Of these, many are preventable.

You're the Scientist: Soil Science

Name _____

Directions: Soil plays a big role in floods. You are the scientist. Follow the steps below to demonstrate how water and soil mix. What happens outdoors after many days of rain?

What you need—

- Clean soup can without a top or bottom
- Tight mesh screen, muslin, or cheesecloth
- Rubber band
- Aluminum pie plate
- Soil
- Measuring cup
- 2 cups (500 ml) of water
- Bucket
- Funnel

What you do—

1. Wrap the mesh screen around one end of the open can. Use the rubber band to keep it on tightly.
2. Put soil into the can, to 1 inch (2.5 centimeters) from the top.
3. Place the can in the pie plate.
4. Pour the water into the can.

You're the Scientist: Soil Science

5. Draw a picture of your experiment.

6. Wait about 5 minutes and remove the can from the pie plate.

You're the Scientist: Soil Science

7. Use the funnel to carefully pour the water from the pie plate into the measuring cup.

   - How much water went through the soil?

     _____

   - How much water stayed in the soil?

     _____

8. Pour the water through the soil again. Wait 5 minutes.

   - How much water went through the soil?

     _____

   - How much water stayed in the soil?

     _____

NOAA Weather Radio All Hazards

http://www.weather.gov/nwr

NOAA Weather Radio All Hazards (NWR) is a nationwide network of radio stations broadcasting continuous weather information directly from the nearest National Weather Service office. NWR broadcasts official Weather Service warnings, watches, forecasts and other hazard information 24 hours a day, 7 days a week.

Working with the Federal Communication Commission's (FCC) Emergency Alert System , NWR is an "All Hazards" radio network, making it your single source for comprehensive weather and emergency information. In conjunction with Federal, State, and Local Emergency Managers and other public officials, NWR also broadcasts warning and post-event information for all types of hazards , including natural (such as tornadoes or floods), environmental (such as chemical releases or oil spills), and public safety (such as AMBER alerts or 911 Telephone outages).

Known as the "Voice of NOAA's National Weather Service," NWR is provided as a public service by the National Oceanic and Atmospheric Administration (NOAA), part of the Department of Commerce. NWR includes 1000 transmitters, covering all 50 states, adjacent coastal waters, Puerto Rico, the U.S. Virgin Islands, and the U.S. Pacific Territories. NWR requires a special radio receiver or scanner capable of picking up the signal. Broadcasts are found in the VHF public service band at these seven frequencies (MHz):

162.400	162.425	162.450	162.475	162.500	162.525	162.550

Coverage information and SAME Codes for every county in Nebraska can be found at:

http://www.weather.gov/nwr/Maps/PHP/nebraska.php

Severe Weather Facts & Myths

Severe Weather Awareness Week March 22 - 26, 2010

Myth: Highway and interstate overpasses are safe shelters against a tornado.

Fact: Overpasses can concentrate the tornado winds, causing them to be significantly stronger. This places the people under them in an even more dangerous situation. In recent years, several people seeking shelter beneath overpasses have been killed or severely injured. Being above ground level during a tornado is dangerous.

Myth: The low pressure with a tornado causes buildings to explode. Opening the windows will equalize the pressure, saving the building.

Fact: Opening the windows in an attempt to equalize pressure will have no effect. It is the violent winds and debris that cause most structural damage. It is more important for you to move to a safe area away from windows and exterior walls. With a tornado, every second counts, so use your time wisely and take cover.

Myth: Thunderstorms and tornadoes always move from west to east.

Fact: More often than not, thunderstorms move from west to east. Conditions in the atmosphere dictate how and where storms will move, and it can be in any direction. Tornadoes have been known to act erratic, and can change directions and speed very quickly. Never try to outrun a tornado in a vehicle.

Myth: It's not raining here, and skies above me are clear, therefore I am safe from lightning.

Fact: Lightning can strike many miles away from the thunderstorm. If storms are in your area, but skies happen to be clear above you, that certainly does not imply you are safe from lightning. Though these "Bolts from the Blue" are infrequent, lightning strikes 10 to 15 miles away from the storm are not out of the question.

Myth: Since I am inside my house and out of the storm, I am completely safe from lightning.

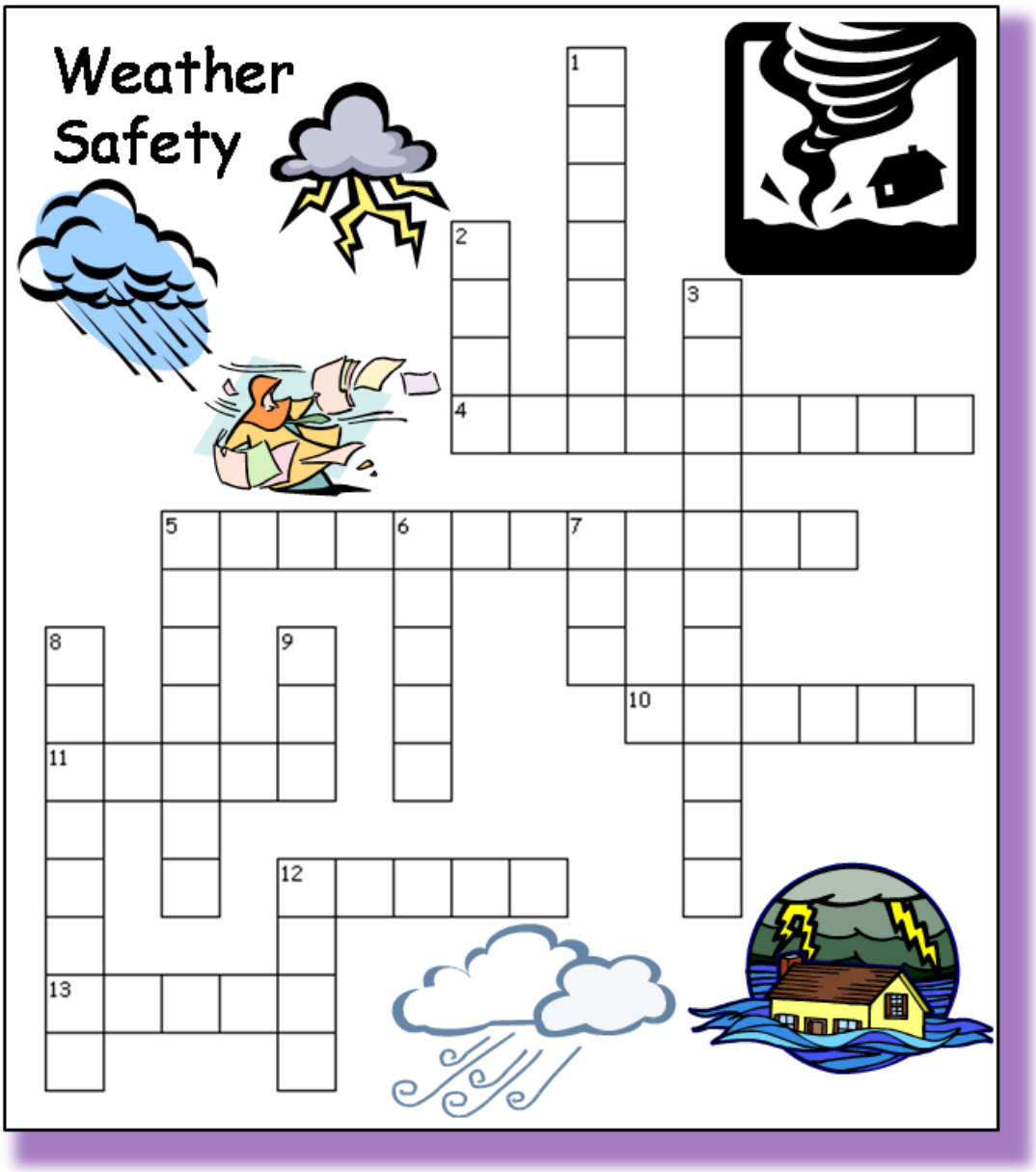
Fact: Just because you have taken shelter inside, you are not automatically safe. While inside waiting out a storm, avoid using the telephone or electrical appliances and do not take showers or baths. Also stay away from doors and windows. Telephone lines, cords, plumbing, even metal window and door frames are all lightning conductors and pose a threat

Myth: Large and heavy vehicles, such as SUVs and pickups, are safe to drive through flood waters.

Fact: It is a common belief that the larger the vehicle, the deeper the water it can drive through. Many people do not realize that two feet of water can float most vehicles, including SUVs and pickups. If the water is moving rapidly, vehicles can be swept away.

Myth: Flash floods only occur along flowing streams.

Fact: Flash floods can and do occur in dry creek or river beds as well as urban areas where no streams are present.



Across

4. A bolt of atmospheric electricity
5. Can produce floods, high winds, lightning, hail and tornadoes
10. On average kills more people than lightning, hurricanes and tornadoes combined
11. Always monitor NOAA Weather _____ All Hazards for the latest weather information from your local National Weather Service
12. A term used to indicate that conditions are favorable for dangerous weather
13. An outdoor warning device

Down

1. Issued by the National Weather Service when dangerous weather is occurring or will occur
2. Precipitation in the form of ice balls
3. The study of weather
5. Is caused by the rapid expansion of heated air around a lightning bolt
6. A test of what to do in case of dangerous weather
7. Inches of fast moving water that can knock a person off of their feet
8. A prediction of future weather
9. Amount of fast moving water (in feet) that can sweep away a vehicle
12. Severe Thunderstorm _____ can exceed 100 mph and knock down trees and power lines

True or False - Do you know your weather safety information?

T F 1. When there is lightning, crouch under a tree.

T F 2. Tornadoes do not occur at night.

T F 3. Stay by the window and watch for streaks of lightning.

T F 4. In a thunderstorm, you usually see lightning before you hear the thunder.

T F 5. When the sky lights up, but you can't see the streaks of lighting, it means the thunderstorm is over.

T F 6. When there is lightning, go to the highest spot on a hill and get our your umbrella for protection.

T F 7. Lightning never strikes the same place twice.

T F 8. You will always notice a funnel before a tornado strikes.

T F 9. A tornado may hit one home but hardly affect the home next door.

T F 10. A tornado can throw cars and trucks into the air.

T F 11. There will seldom be lightning during a tornado.

T F 12. Thunderstorms are only dangerous during the afternoon and evening hours.

T F 13. The sky may be clear at the time you hear a tornado watch has been issued.

T F 14. When a tornado is coming, take a quick picture before taking shelter.

T F 15. When a flash flood warning is issued, it means flash flooding is occurring or expected to occur.

T F 16. Flash floods only occur along rivers and creeks.

T F 17. If you are camping and a flash flood occurs, run to higher ground.

T F 18. Drive as fast as possible through a flooded road to avoid being washed downstream.

T F 19. A flash flood can wash out roads and bridges and uproot trees.

T F 20. It is safe to walk across a flooded street with water half way up to my knees.

T F 21. The fastest way to hear about watches and warnings is by having a NOAA Weather Radio.

T F 22. Straight-line winds from a severe thunderstorm can cause damage comparable to a tornado.

T F 23. On average, floods kill more than any other severe weather hazard.

T F 24. When there is lightning, stay away from anything made of metal.

T F 25. Take shelter in a large room such as a gymnasium if there is a tornado warning.

Answers: 1-F, 2-F, 3-F, 4-T, 5-F, 6-F, 7-F, 8-F, 9-T, 10-T, 11-F, 12-F, 13-T, 14-F, 15-T, 16-F, 17-T, 18-F, 19-T, 20-F, 21-T, 22-T, 23-T, 24-T, 25-F

TORNADO WARNING SCRAMBLE

What's up, guys and girls? I'm Tommy Twister, the tornado safety expert. My job is to remind you to take action when there is a tornado warning in your area. To help you remember what to do before a tornado, I created a fun game for you with a twist – check it out!

Below is a list of words for you to unscramble. These are words that might come to mind when you think about tornadoes. First, unscramble each word. Then, look for the circled letter in each word. Copy these letters, in order, into the blank spaces near the bottom of the page. You will see a secret message!

arido ___ ___ ___ ___(___)

wheater ___ ___ ___(___)___ ___ ___

ydwni ___ ___ ___ ___(___)

duclo ___ ___(___)___ ___

risbed ___ ___ ___(___)___ ___

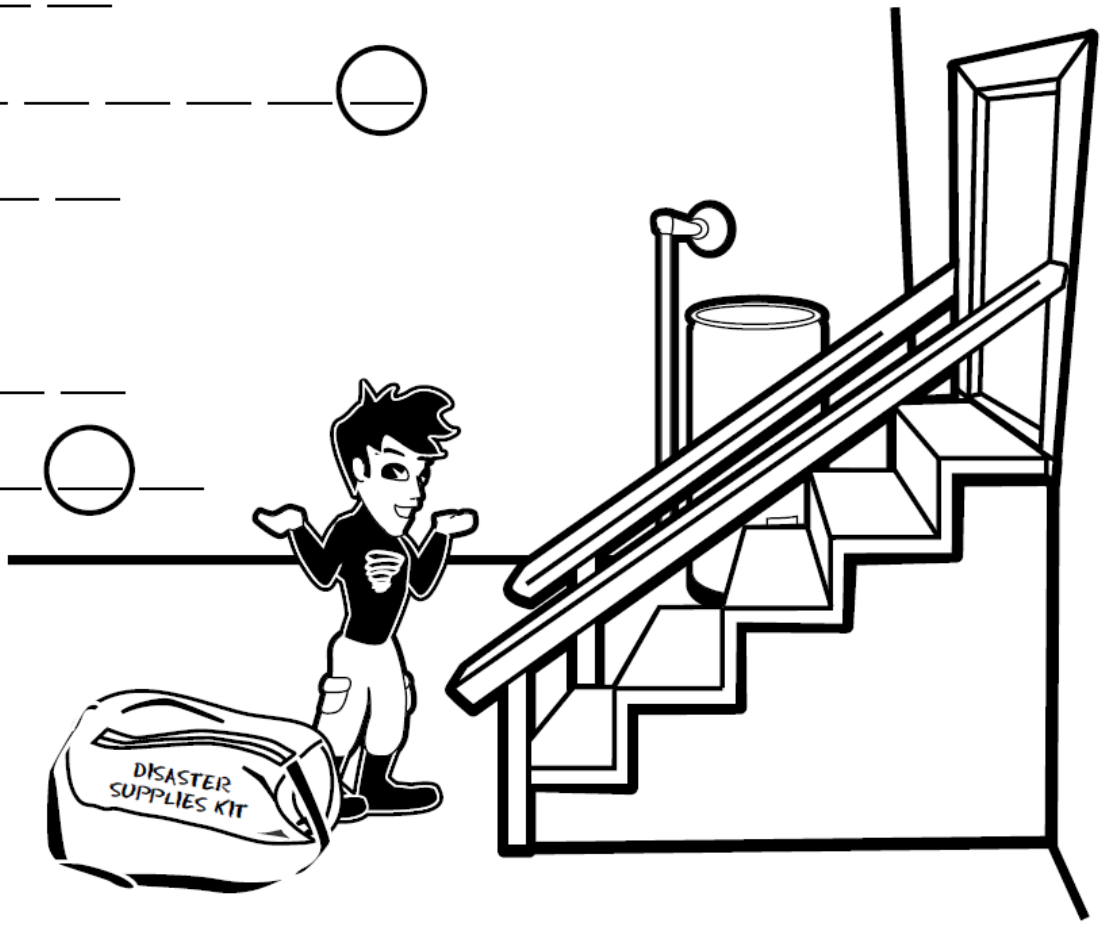
dorantoes ___ ___ ___ ___ ___ ___ ___ ___(___)

nelfun(___)___ ___ ___ ___ ___

owl(___)___ ___

doculy(___)___ ___ ___ ___ ___

terswit ___ ___ ___ ___ ___(___)___



G_ _O _ _U_ _A_E P_A_ _

Congratulations! Now you know what to do if there is a tornado warning!